

SBI3U: Teacher Handout For 'Build a Lung!'

When to Use:

- 1) As a 'Mind's On' for the lesson that addresses the Human Lungs.
- 2) As a 'Consolidation' exercise after teaching the Human Lungs.

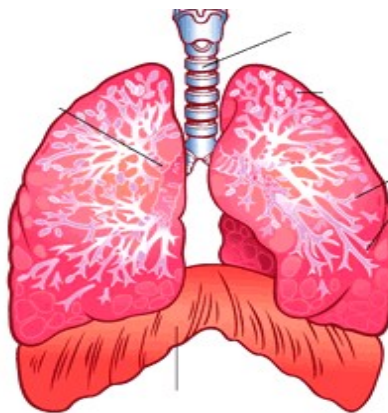
Expectations Addressed:

E1.2 (if include 'Going Further' – see below)

E2.1 , E3.1

Materials Needed:

- top half of a 2 L bottle (1 per group)
- small balloon (1 per group)
- plastic drinking straw (1 per group)
- small plastic trash bag, cut in circle (1 per group)
- rubber bands (2 per group)
- tape (~30 cm per group)
- Student handouts (1 per student)



Steps for Activity:

- 1) Distribute handout to the students in groups of 2-3. Ask one member from each group to collect the materials for the group. Ask students to read through the instructions and ask any questions about what is expected.
- 2) When students are working on the construction of the lung, circulate and listen to the conversations that are taking place. Use this as a gauge for the initial understanding students have about the lungs.
- 3) If some of the groups have discovered how it works, encourage them to give tips to other groups that may be having difficulty.
- 4) Once all groups have constructed their lung, created a hypothesis about how it works AND have drawn the appropriate diagrams, bring the discussion back to the whole class.
- 5) Have a volunteer group explain how they constructed their lung and how it functions. If there are variations on the construction, have other groups share their version.
- 6) Ask a different group to guess why the construction works the way it does. Ask other students to give their opinions as well.
- 7) Once a discussion has taken place, briefly give to the students the correct explanation about why the apparatus works and how it relates to our lungs. Explain that this will be covered in more detail through the following lessons.

Assessment Opportunities:

- *Assessment for Learning:* When used as a 'Minds On', can provide a diagnostic to see how familiar the students are with how the human lungs function before being formally taught. When used as a 'Consolidation', can see how detailed the students' understanding of the function of the lungs is upon completion of instruction.
- *Assessment as Learning:* Students can reflect on their own understanding of how the diaphragm functions in the respiratory system.

Potential STSE Connection:

- *'Going Further' (Potential web exploration)* - Do some research to find out what an "iron lung" is and why it was used in the past. Find out what is used today to help people who have difficulty breathing.